

1 INTEGRATED TRANSMITTER SURVEYING WHILE
2 BORING (SWB) ENTRENCHING POWERING DEVICE
3 FOR THE CONTINUATION OF A GUIDED BORE HOLE

4 ABSTRACT OF THE DISCLOSURE

5 A bottom hole assembly for horizontal directional
6 drilling that improves the accuracy of surveying while
7 boring by enabling the progress of the bore to be
8 monitored and tracked with the aid of a sonde. In one
9 embodiment the sonde is received in the wall of a housing
10 area of a mud motor surrounding the bearing mandrel, in
11 another embodiment the sonde is carried in the wall of a
12 collar surrounding the bearing mandrel housing, and in an
13 additional embodiment the sonde is carried in an adapter
14 between the bearing mandrel and the bit.